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Innovative tools for improving flood risk reduction strategies: the FLORIS project

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The FLORIS project aims to study innovative approaches for the development of integrated flood risk scenarios taking into consideration critical specific issues of areas at risk and the consequences of high frequency/low damage events that affect them. High frequency floods still involve and require mitigation actions on the part of civil protection and citizens before floodwaters inundate the land and directly impact assets. These emergency actions can benefit from enhanced protocol development based on realistic scenarios.

In particular, the main idea is to develop a supporting decision tool for the comparative analysis of disaster reduction strategies in flood risk management. This will have a specific focus on studying the functional vulnerability of critical infrastructure in order to preserve their efficiency during and after hazardous events. This includes hydraulic modelling at a finer scale, vulnerability and damage analysis at single element scale.

To address the project aims, identification of critical infrastructures that influences both the actions and outcomes of civil protection in flood prone areas and the disruption to the at-risk public, will be undertaken. To achieve the goal, initial steps consist of presenting to, and discussing with, civil protection teams the established approaches already available to them together with those identified by the project team from past research and within the literature. This will identify opportunities to further develop the civil protection protocols via innovative modelling of cascade effects incorporating existing algorithms. The developed procedures for flood risk reduction, taking into account resource management requirements will then be applied in a pilot case study, in the city of Berat, Albania and in Sarajevo, Bosnia and Herzegovina.

Working with the relevant professionals who are the principal beneficiaries of the project enables protocols to be co-developed to include associated physical, social and resource characteristics particular to the selected location. The main achievements will include enhanced management for flood protection in the beneficiary organisation with increased awareness of the interrelationships both spatially and temporally enhancing management protocols, protocols more closely aligned

with existing beneficiaries' procedures and resources for sustainability and establishing tools that are transferable to other regional and country contexts.

The main expected output is a suite of tools, embedded in a cascade procedure, able to support various actors (Civil Protection, municipalities, administrations, professionals, etc.) in planning and design measures to improve flood risk management actions under different and variable risk scenarios including climate and global change.

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